

## Measuring statewide transfer degree effectiveness

**April 2019** 

## Introduction

Between 2020 and 2025, there will be 33,000 annual job openings requiring a bachelor's degree in Washington. Projections show that almost 7,000 positions will remain unfilled each year because there will not be enough Washingtonians with the proper credentials. There are many ways to earn a bachelor's degree. Some students choose to enroll at one institution and stay there until they earn their bachelor's degree. Others start their journey at a community or technical college (CTC) before transferring to a four-year institution that awards a bachelor's degree. In Washington, the goal is for both paths to offer similar value to students. This is especially important since nearly 40 percent of Washington public bachelor's degree earners in 2014-15 and 2015-16 transferred from a Washington CTC.a

Washington is a national leader in transfer outcomes. For example, the state is ranked second in the country for the proportion of CTC students who finish bachelor's degrees after transferring to a four-year institution.<sup>2</sup> The following multi-sector collaborations contribute to Washington's transfer success:

- The Joint Transfer Council (JTC) is a standing committee that works to improve and advance student transfer in Washington. It includes representatives from Washington's public and private institutions.
- The Intercollege Relations Commission (ICRC) is a collaboration of Washington's public and private institutions to facilitate transfer between institutions for all students pursuing a bachelor's degree in the state.

Both groups work closely with the Washington Student Achievement Council (WSAC), State Board for Community and Technical Colleges (SBCTC), Council of Presidents (COP), and Independent Colleges of Washington (ICW) to identify and respond to emerging issues, as well as to find opportunities to reduce barriers for all students.

Washington's transfer partners work together to create and maintain policies that support seamless credit transfer between Washington's colleges and universities. These policies are a critical part in meeting the state's postsecondary educational attainment goals. Effective transfer policy generally helps CTC students access affordable, quality bachelor's degrees, while providing opportunities to earn valuable credentials along the way.

Washington's transfer success is also reflected in its robust statewide transfer associate degree agreements. Students who complete any of these CTC degrees will generally have junior class standing and 90 transferrable quarter credits (or 60 semester credits) upon transfer to public four-year institutions and many private institutions. Washington's transfer degrees provide clear pathways for transfer students to finish bachelor's degrees efficiently and affordably. Research shows that a well-defined pathway between CTCs and four-year institutions provides students with a successful transfer experience.<sup>3</sup> Evidence also suggests that students have a higher

\_

<sup>&</sup>lt;sup>a</sup> Based on WSAC staff analysis of public four-year bachelor's degree completions in academic years 2014-15 and 2015-16 from Mutual Research Transcript Exchange (MRTE+) database.

probability of earning a bachelor's degree if they transfer after earning an associate degree or other credential.<sup>4</sup>

Washington's transfer degrees' influence on bachelor's degree attainment is clear: 77 percent of students who entered a public four-year institution in 2013-14 with a Washington transfer degree earned their bachelor's degree within four years of transferring. This is higher than the rate for all transfers, which was 71 percent. It is even higher than the rate for direct from high school students, which was 69 percent.<sup>5</sup> These outcomes indicate that Washington's statewide associate degrees and related policies provide effective bachelor's degree pathways for Washington's CTC students.

### **Overview**

This descriptive report is the eighth iteration of the biennial transfer progress report required by the Washington State Legislature.<sup>b</sup> The report:

- Monitors progress on the following transfer effectiveness indicators:<sup>c</sup>
  - The number of students earning transfer degrees over time
  - The median quarter credits earned toward a bachelor's degree by transfer students versus students who enter a four-year institution directly
- Describes new transfer associate degrees
- Provides other data on transfer efficiency improvements

The report focuses mainly on analyzing the transfer effectiveness indicators. The following section describes the data and methodology used for the analysis and includes study findings. Transfer associate degree and transfer efficiency updates are then shared in a Transfer Updates section. The report ends with suggested future work.

# **Data and Methodology**

### What was studied

This report uses administrative data from the 34 public CTCs, the six public four-year institutions, and eight ICW institutions.<sup>d,e</sup> It examines the number of each type of each type of transfer degree earned for academic years 2013-14 through 2017-18. It also examines bachelor's degree completion records of students who earned at least one bachelor's degree in academic years 2014-15 and 2015-16. The results are descriptive and do not imply causation. Table 1 outlines the number of students studied in each sector by year.

Table 1: Total number of bachelor's degree earners for academic years 2014-15 and 2015-16 at public four-year and ICW institutions

pow / o.				
Academic year	Total number of bachelor's degree	Total number of bachelor's degree		
	earners - public four-year institutions	earners - ICW institutions		
2014-15	21,839	4,118		
2015-16	22,107	4,182		

Source: WSAC staff analysis of public four-year bachelor's degree completions in academic years 2014-15 and 2015-16 from Mutual Research Transcript Exchange (MRTE+) database and ICW bachelor's degree earners in academic years 2014-15 and 2015-16 from data received in June 2018 from participating ICW institutions.

<sup>&</sup>lt;sup>b</sup> Report requirements defined in RCW 28B.77.220.

c Indicators were developed in the 2005 transfer report, as required by RCW 28B.77.220.

<sup>&</sup>lt;sup>d</sup> There are 10 ICW institutions. They all accept transfer students, but only eight participate in the statewide transfer degree agreements.

<sup>&</sup>lt;sup>e</sup> See Appendix A for the list of institutions included in the report.

### Data sourcesf

### Public institutions

Transfer degrees awarded over time data came from SBCTC's Transfers After College Status Dashboard.<sup>9</sup> It includes transfer degrees earned through academic year 2017-18.

Public CTC and bachelor's degree completion data came from the Mutual Research Transcript Exchange (MRTE+) database, which is housed at SBCTC. This database combines CTC enrollment data from the SBCTC Data Warehouse and four-year institution data from the Public Centralized Higher Education Enrollment System (PCHEES), which is maintained by the Education Research and Data Center (ERDC) in the Office of Financial Management. MRTE+ links anonymized student unit records between and among public colleges and universities. CTC data includes degree completion records from academic year 2004-05 to academic year 2015-16. Four-year institution degree completion records are from academic year 2007-08 to academic year 2015-16.6 Students have one record for each bachelor's degree earned in each study year.

### ICW institutions

Participating ICW institutions sent data directly to WSAC in June 2018. The requested data was anonymized student level data for individual students who entered the institution as a bachelor's degree seeking student in Summer Term 2010 or after. It included one record for every student who earned at least one bachelor's degree in academic years 2014-15 and 2015-16. Records were unique by student and by year.

### **Definitions**

Washington's CTCs offers three types of transfer associate degrees:

- The Direct Transfer Agreement (DTA) Associate degree allows students to complete the lower division general education requirements toward most bachelor's degrees at the state's public four-year institutions and the ICW institutions in this report, in addition to other fouryear institutions.
- The Associate of Science-Transfer (AS-T) is focused on math and science courses for students
  preparing for a bachelor's degree in science and engineering. The AS-T has two tracks.
  Track 1 (AS-T 1) prepares students for biological sciences, environmental/resource sciences,
  chemistry, geology, and earth science. Track 2 (AS-T 2) prepares students for engineering,
  computer science, physics, and atmospheric sciences.
- Major Related Programs (MRPs) focus on specific majors that are offered at multiple four-year institutions, have significant prerequisites in the freshman and sophomore years and are in high student demand. They are course plans within the structure of either the DTA or AS-T. There are ten MRPs, eight based on the DTA (Biology, Business, Computer Science, Construction Management, Math Education, Music, Nursing, and Pre-Nursing) and two on the AS-T 2 (Engineering, Engineering Technology).

f Appendix B outlines data calculations, limitations, and deletions.

g https://www.sbctc.edu/colleges-staff/research/data-public/transfers-dashboard.aspx

<sup>&</sup>lt;sup>h</sup> There is one record for each major completed by an individual student and one record per institution, if a student earned degrees at multiple institutions in the same year.

This report uses these terms:

- "Transfer degree" is an umbrella term that includes the DTA, AS-T 1, AS-T 2, and all MRPs.
- "Major-specific transfer degrees" are the AS-T 1, AS-T 2, and all MRPs since they prepare students for specific bachelor's degree majors or major areas.
- "Major areas" refer to the two groups of bachelor's degree majors associated with each of the AS-T degrees.
- "AS-T 1-related majors" are biological sciences, environmental/resource sciences, chemistry, geology, and earth science.
- "AS-T 2-related majors" are engineering, computer science, physics and atmospheric sciences.
- "Credits to degree" refers to the median number of credits a student earns toward their bachelor's degree. Typically, bachelor's degrees require 120 semester credits or 180 quarter credits, although there are exceptions. Exceptions will be noted in the report when applicable.

### Measures

The 2005 version of this report established that one way to measure transfer effectiveness is to compare the median credits to degree for transfer students and students who enter the four-year institutions directly.<sup>1,7</sup> For the purposes of this report, a major-specific transfer degrees is considered effective when the median credits earned toward a related bachelor's degree by transfer students with one of these degrees is similar to the median credits earned by students who enter the four-year institution directly.<sup>1</sup> As such, this report analyzes the following:

- The number of students earning transfer degrees over a five-year period
- Median quarter credits earned toward a specific bachelor's degree major or major area by students who entered the four-year institution via the following subgroups:<sup>k,l</sup>
  - Directly into the four-year institution (Direct Entry)
  - With the DTA
  - With the MRP or AS-T associated with the bachelor's degree major or major area being studied
  - From a Washington CTC but no transfer degree (CTC Transfer)<sup>m</sup>
  - As a non-CTC transfer student (Non-CTC Transfer)<sup>m</sup>

This report focuses on bachelor's degree majors or major areas associated with six of the major-specific transfer degrees as outlined in Table 2.<sup>n</sup> The table also includes the four-year institutions that participate in the six transfer degree agreements and the year the transfer degree was introduced. For each major-specific transfer degree in the report, the analysis includes only participating four-year institutions.

<sup>&</sup>lt;sup>1</sup> SBCTC also published a report (https://www.sbctc.edu/resources/documents/colleges-staff/research/transfer-research/18-3-role-of-transfer-2018.pdf) in May 2018 that used MRTE+ to calculate median credits to bachelor's degrees awarded in academic year 2015-16. Results from this report are slightly different due to differences in the study populations.

i Since WSAC recognizes there are other transfer effectiveness measures, the "Areas for future work" section includes additional metrics for possible future research.

<sup>&</sup>lt;sup>k</sup> Semester credits were converted to quarter credits by multiplying semester credits by 1.5.

<sup>&</sup>lt;sup>1</sup> Complete subgroup definitions found in Appendix B. The definitions are slightly different for the public four-year institutions and the ICW institutions.

<sup>&</sup>lt;sup>m</sup> Although not included in the 2005 transfer report, this group is included in this report since other agency reports that include median credits to degree include this population.

<sup>&</sup>lt;sup>n</sup> Bachelor's degree majors or major areas associated with transfer degrees introduced after the study period, transfer degrees that were eliminated as of January 2019, and transfer degrees with low participation rates are not studied. A participation rate was considered low if ten or fewer students with a major-specific transfer degree completed an associated bachelor's degree for a particular study year.

Table 2: Bachelor's degree majors and major areas studied, their associated transfer degree, and participating four-year institutions.

Bachelor's degree major or major	Associated	Year	Partner institutions
area°	transfer degree	introduced	
Major area: Biological sciences, environmental/resource sciences, chemistry, geology, and earth science	Associate of Science-Transfer Degree Track 1 (AS-T 1)	2000	All report institutions except Gonzaga University
Major area: Engineering, computer science, physics, and atmospheric sciences	Associate of Science-Transfer Degree Track 2 (AS-T 2)	2000	All report institutions except Pacific Lutheran University and Whitworth University
Major: Biology	Associate in Biology DTA/MRP (Biology DTA/MRP)	2009	<ul> <li>All public four-year institutions</li> <li>Saint Martin's University</li> <li>Seattle Pacific University</li> <li>Seattle University</li> <li>Whitworth University</li> </ul>
Major: Business administration, including accounting, management, and management information systems	Associate in Business DTA/MRP (Business DTA/MRP)	2003	All report institutions
Major: Engineering, including:	AS-T Engineering/MRP (Engineering AS-T 2/MRP) <sup>p</sup>	2005	<ul> <li>University of Washington</li> <li>Washington State University</li> <li>Eastern Washington University</li> <li>Gonzaga University</li> <li>Saint Martin's University</li> <li>Seattle Pacific University</li> <li>Seattle University</li> <li>Walla Walla University</li> </ul>
Major: Bachelor of Science in Nursing (BSN)	Associate in Pre- Nursing DTA/MRP (Pre-Nursing DTA/MRP	2005	<ul> <li>University of Washington         <ul> <li>Seattle</li> </ul> </li> <li>Washington State         <ul> <li>University – Spokane,</li> <li>Tri-Cities, Yakima</li> </ul> </li> <li>Pacific Lutheran         <ul> <li>University</li> </ul> </li> <li>Seattle Pacific University</li> <li>Seattle University</li> <li>Walla Walla University</li> </ul>

Source: https://www.wsac.wa.gov/transfers; Department of Health list of approved nursing programs in Washington

<sup>°</sup> See Appendix C for specific majors and Classification of Instructional Programs (CIP) codes. Also, note that students may show up in more than one major or major area.

P There are actually three associate degree tracks in the Engineering AS-T 2/MRP agreement: biological/chemical engineering, computer engineering/electrical engineering, and other engineering (which includes mechanical, civil, aeronautical, industrial, and materials science engineering). The report groups all majors together in its analysis.

# **Detailed Findings**

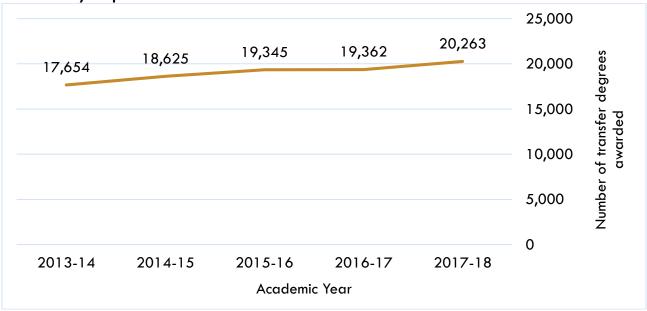
The results for the public four-year institutions and the ICW institutions are presented separately because the data are from different sources and student entry type differ slightly. The findings are separated into three categories:

- Transfer degree trends over time
- Median credits to degree at public four-year institutions
- Median credits to degree at ICW institutions

### Transfer degree trends over time

More students are earning Washington transfer degrees. From academic year 2013-14 to academic year 2017-18, transfer degree awards increased by 15 percent. CTCs awarded more than 20,000 transfer degrees in academic year 2017-18, as shown in Figure 1. In addition, 67 percent of associate degrees awarded by CTCs in 17-18 were transfer degrees.<sup>8</sup> In 2013-14, that proportion was 62 percent.

Figure 1: The number of statewide transfer degrees awarded in academic year 2017-18 increased by 15 percent since 2013-14



Source: SBCTC Transfers Dashboard: Academic Transfer Degrees table, accessed February 6, 2019 at https://www.sbctc.edu/colleges-staff/research/data-public/transfers-dashboard.aspx.

This overall positive trend also appears for individual transfer degree types. Table 3 shows that the number of awards from academic year 2013-14 to academic year 2017-18 increased for almost all transfer degree types. Notably, Nursing DTA/MRP awards increased eleven-fold to 288 since the first 24 students graduated in 2016. This is likely because the Nursing DTA/MRP replaced thriving Associate Degree in Nursing programs at many CTCs. The only downward trend was for the "Other DTA/MRP" category, which is due to elimination of the Elementary Education DTA/MRP in 2014.

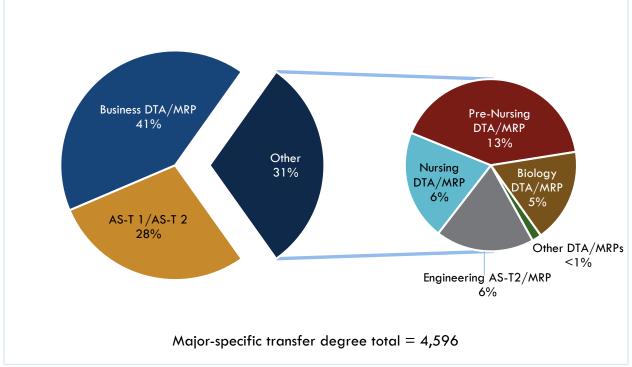
Table 3: Number of transfer degrees awarded by degree type, 2013-14 through 2017-18.

Academic Year	DTA	AS-T 1	AS-T 2	Biology DTA/ MRP	Business DTA/ MRP	Engineering AS-T2/MRP	Nursing DTA/ MRP	Pre- Nursing DTA/ MRP	Other DTA/ MRPs
2017-18	15,667	402	905	246	1,896	258	288	576	25
2016-17	1 <i>5</i> ,001	466	850	222	1,880	189	198	543	13
2015-16	1 <i>5</i> ,3 <i>57</i>	388	833	182	1,819	219	24	502	21
2014-15	1 <i>5</i> ,070	379	723	126	1,621	178	0	466	62
2013-14	14,303	347	691	103	1,510	173	0	455	72

Source: SBCTC Transfers Dashboard: Academic Transfer Degrees table, accessed February 6, 2018 at https://www.sbctc.edu/colleges-staff/research/data-public/transfers-dashboard.aspx.

A larger proportion of CTC graduates are choosing major-specific transfer degrees. In 2013-14, 81 percent of all transfer degrees awarded were DTAs. By 2017-18, the DTA proportion of total awards fell to 77 percent while MRP awards rose to 16 percent from 13 percent (an increase of 24 percent). The AS-T degree proportion stayed about the same. Further analysis of 2017-18 award amounts shows that the most popular major-specific transfer degree was the Business DTA/MRP, followed by the AS-T 2 and the Pre-Nursing DTA/MRP. Major-specific degrees are split into three roughly equal categories: Business DTA/MRP, AS-T 1/AS-T 2, and other MRPs as shown in Figure 2.

Figure 2: The most awarded major-specific transfer degree in 2017-18 was the Business DTA/MRP



Source: SBCTC Transfers Dashboard: Academic Transfer Degrees table, accessed February 6, 2019 at https://www.sbctc.edu/colleges-staff/research/data-public/transfers-dashboard.aspx.

### Median credits to degree at public four-year institutions

To measure major-specific transfer degree effectiveness, this report analyzes the median credits to degree in academic years 2014-15 and 2015-16 for the different entry types (focusing on comparing transfer students with a major-specific transfer degree and direct entry students) at Washington's six public four-year institutions.<sup>q</sup> Because both cohorts had similar results for most bachelor's degree majors and major areas, the following figures primarily focus on the 2015-16 cohort. Where results are different or useful for discussion, both cohorts are included. All accompanying 2014-15 figures are in Appendix D.

Transfer students were about half of bachelor's degree earners at the public four-year institutions. Before calculating credits to degree, it is useful to understand the distribution of the different entry types across the entire public four-year populations. A little more than half of bachelor's degree graduates for both study years were transfer students (Figure 3). Figure 4 categorizes transfer students who earned bachelor's degrees in 2015-16 by entry type. It shows that 75 percent of transfer students came from a CTC, and that about half of transfer students entered the four-year institution with a Washington transfer degree. Of those students who entered with a transfer degree, the DTA was the most common.

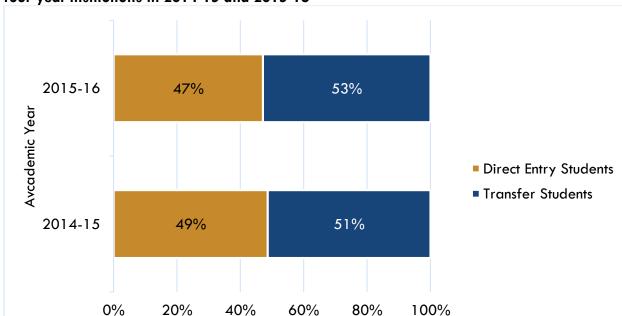


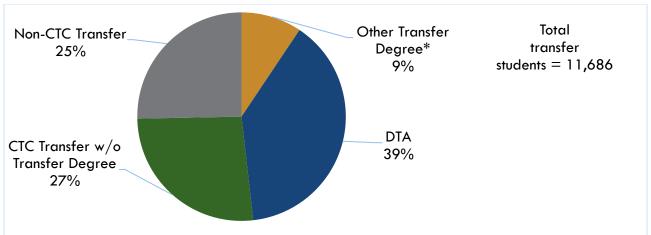
Figure 3: Transfer students composed about half of bachelor's degree earners at the public four-year institutions in 2014-15 and 2015-16

Source: WSAC staff analysis of public four-year bachelor's degree completions in academic years 2014-15 and 2015-16 from Mutual Research Transcript Exchange (MRTE+) database.

Proportion of bachelor's degrees awarded at public four-year institutions

<sup>&</sup>lt;sup>q</sup> Bachelor's degrees awarded at CTCs were not included. See Appendix B for more information about data sources.

Figure 4: About half of the transfer students who earned a public four-year bachelor's degree in 2015-16 transferred in with a Washington transfer degree

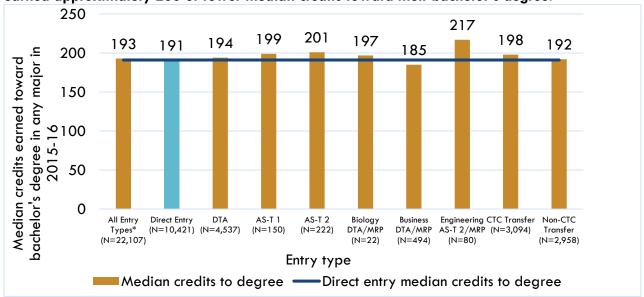


\*Includes students with two or more transfer degrees.

Source: WSAC staff analysis of public four-year bachelor's degree completions in academic year 2015-16 from Mutual Research Transcript Exchange (MRTE+) database.

Median credits to degree for all public four-year bachelor's degree graduates. This section begins with overall findings by entry type, regardless of bachelor's degree earned, followed by a closer examination comparing transfer students and direct entry within each major and major area. Figure 5 shows the median credits earned toward all bachelor's degrees earned in 2015-16 by all entry types. Direct entry students earned 191 median credits to degree. Transfer students with an Engineering AST-2/MRP had the highest median credits to degree with 217 median credits. Those with the Business DTA/MRP had the lowest with 185.

Figure 5: For all public four-year bachelor's degrees earned in 2015-16, most entry types earned approximately 200 or fewer median credits toward their bachelor's degree.



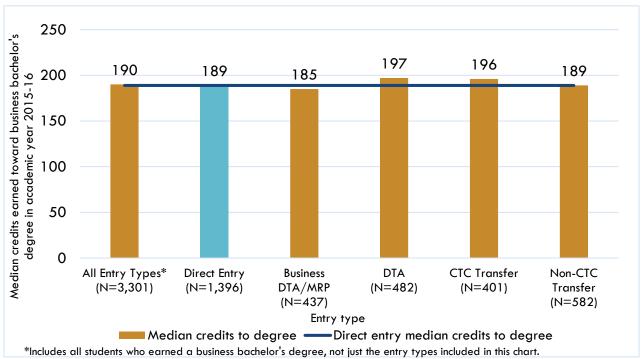
\*Includes students who entered with a transfer degree not studied in report and students with two or more transfer degrees. Source: WSAC staff analysis of public four-year bachelor's degree completions in academic year 2015-16 from Mutual Research Transcript Exchange (MRTE+) database.

<sup>&</sup>lt;sup>r</sup> Transfer degree entry types do not include students who earned multiple transfer degrees.

To more closely study the effectiveness of AS-T and MRP degrees, this report examines median credits to degree for the majors or major areas that are associated with the AS-T 1, AS-T 2, Biology DTA/MRP, Business DTA/MRP, and Engineering AS-T 2/MRP.<sup>5</sup> Results are compared to direct entry students for those majors, as well as to the other entry types.

Transfer students with a Biology DTA/MRP, Business DTA/MRP, or AS-T 1 who earned a bachelor's degree in their associated major or major area had slightly fewer median credits to degree than direct entry students in the public four-year institutions. The median credits to degree measure indicates that these three major-specific transfer degrees led students effectively to a bachelor's degree in biology, business, and an AS-T 1-related major, respectively. In fact, transfer students with these transfer degrees had fewer median credits to degree than any student type, including direct entry students. For example, Figure 6 shows the 2015-16 results for the most popular MRP, the Business DTA/MRP.† For that study year, business bachelor's degree earners who entered with a Business DTA/MRP earned fewer median credits to degree than any other entry type.

Figure 6: Business degree earners who entered the public four-year institution with a Business DTA/MRP earned the fewest median credits toward their degree in 2015-16



Source: WSAC staff analysis of public four-year bachelor's degree completions in academic year 2015-16 from Mutual Research Transcript Exchange (MRTE+) database.

<sup>&</sup>lt;sup>5</sup> Report does not include analysis of the Pre-Nursing DTA/MRP due to data limitations outlined in Appendix B. Refer to Table 2 for more information about each of these transfer degrees.

<sup>&</sup>lt;sup>†</sup> See Appendix D for Biology DTA/MRP and AS-T 1 figures.

The AS-T 2 performed differently in the two study years when compared to direct entry students in the public four-year institutions. Students with an AS-T 2 who majored in engineering, computer science, physics, or atmospheric sciences had six more median credits to degree than direct entry students in 2014-15 and one less median credit to degree than direct entry students in 2015-16 (Figure 7). More years of study may reveal a trend.

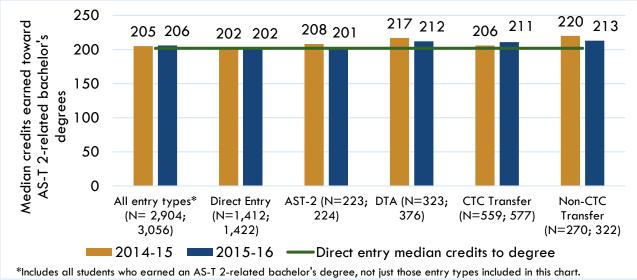


Figure 7: Transfer students with an AS-T 2 who earned an AS-T 2-related bachelor's degree had fewer median credits to degree in 2015-16 than in 2014-15

Source: WSAC staff analysis of public four-year bachelor's degree completions in academic years 2014-15 and 2015-16 from Mutual Research Transcript Exchange (MRTE+) database.

**AS-T 2/MRP earned more median credits than direct entry students for both study years.** The Engineering AS-T 2/MRP was the only major-specific transfer degree to have more median credits to degree than direct entry students for both study years. Engineering bachelor's degree graduates with the Engineering AS-T 2/MRP earned approximately 15 median credits, or one quarter's worth of full-time study, more than direct entry students in both study years. <sup>u,v</sup>

Figure 8 shows the median credits earned toward an engineering bachelor's degree by all entry types for 2015-16. It also shows that Engineering AS-T 2/MRP transfer students earned more median credits than those who had the broader AS-T 2 (which also prepares students for an engineering degree in addition to other STEM degrees) and about the same as transfer students without a transfer degree. Transfer students who entered with a DTA who earned an engineering bachelor's degree earned a significantly higher number than both direct entry students and students with the Engineering AS-T 2/MRP. It is unknown why engineering students earned higher median credits toward their degree, since there are many variables involved. For example, the engineering-specific transfer degree has three different tracks with credit requirements ranging from 90 to 110. Continuing to watch this metric will reveal any trends, and further research is worth exploring.

<sup>&</sup>lt;sup>u</sup> Engineering graduates include all engineering majors listed in Table 2.

<sup>&</sup>lt;sup>v</sup> One full-time quarter of median credits is used as a measurement in this report since tuition is charged by the quarter at the majority of institutions in the report.

bachelor's degree in academic year 2015-16 Median credits earned toward engineering 257 250 222 220 221 211 205 206 200 150 100 50 0 Non-CTC All Entry Direct Entry Engineering AS-T 2 DTA CTC Types\* (N=658)AS-T (N=156)(N=92)Transfer Transfer 2/MRP (N=1,350)(N=228)(N=132)(N=74)Entry type Median credits to degree — Direct entry median credits to degree \*Includes all students who earned an engineering bachelor's degree, not just the entry types included in this chart.

Figure 8: In 2015-16, engineering bachelor's degree earners at the public four-year institutions with an Engineering AS-T 2/MRP had more median credits to degree than students who entered directly or who entered with an AS-T 2<sup>w</sup>

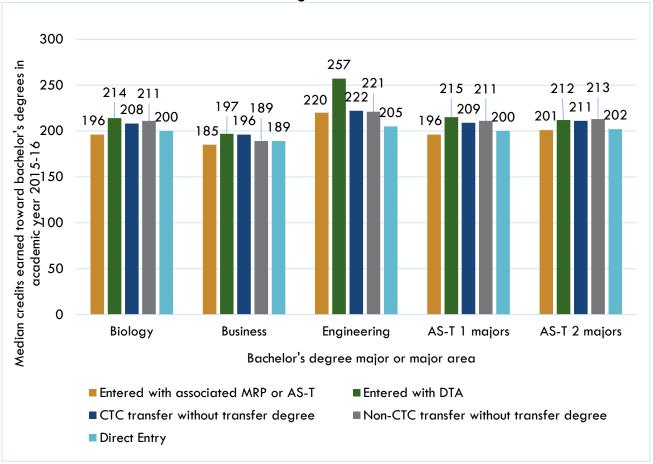
Students with a major-specific transfer degree had fewer credits to degree in an associated major or major area than students with a DTA or without a transfer degree at the public four-year institutions. Because major-specific transfer degrees were created as focused alternatives to the broader DTA, the report compares outcomes for major-specific transfer degrees and the DTA. Likewise, it also includes outcomes for students who transfer without a transfer degree (either from a Washington CTC or another institution). Unsurprisingly, students with major-specific degrees earned fewer median credits toward their associated major or major area than students with a DTA. They also earned fewer median credits than transfer students without a transfer degree.\* For three of the five majors or major areas, students with a DTA earned over one quarter's worth of median credits more than students with an associated MRP or AS-T.

Figure 9 shows the median credits earned in 2015-16 for all five bachelor's degree majors and major areas by students with the associated MRP or AS-T, students with a DTA, CTC transfer students without a transfer degree, and non-CTC transfer students without a transfer degree. It also includes direct entry students as a comparison.

<sup>\*</sup> The small number of students who earned some combination of an AS-T 1, AS-T 2, and DTA (including MRPs based on those degrees) appear more than once.

<sup>\*</sup> The exceptions are 2014-15 engineering bachelor's degree earners who entered with an Engineering AS-T 2/MRP and transfer students with an AS-T 2 who earned an AS-T 2-related bachelor's degree in 2014-15.

Figure 9: In 2015-16, transfer students with an MRP or AS-T earned fewer median credits toward their associated bachelor's degree at the public four-year institution than students with a DTA or students without a transfer degree<sup>y</sup>



For all five majors and major areas, more transfer students entered the public four-year institution with a DTA or without a transfer degree than with the associated major-specific transfer degree. Although students with a major-specific transfer degree had fewer median credits to degree than students with a DTA or without a transfer degree, transfer students tended to have a DTA or no transfer degree rather than having an AS-T or MRP. For almost all majors/major areas and academic year combinations, there were more transfer students without a transfer degree than those with any kind of transfer degree.<sup>2</sup> The proportions vary across majors and major areas as shown in Figure 10. It includes the proportions of the different transfer student entry types for 2015-16 bachelor's degree earners. Business bachelor's degree earners had the most even proportions for the four entry types. Biology bachelor's degree earners had the most disparate.

<sup>&</sup>lt;sup>y</sup> The small number of students who earned some combination of an AS-T 1, AS-T 2, and DTA (including MRPs based on those degrees) appear more than once.

 $<sup>^{\</sup>rm z}$  Transfer students without a transfer degree include those in the "CTC Transfer" and "Non-CTC Transfer" categories.

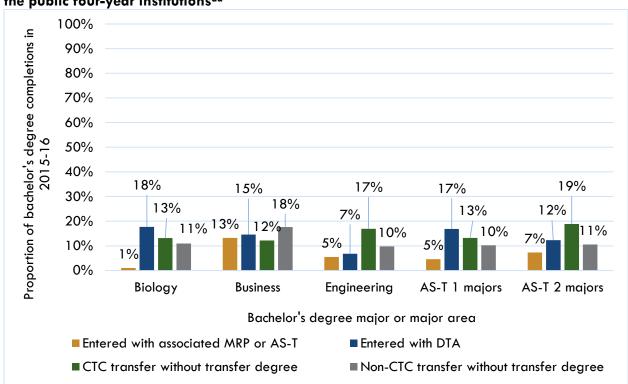


Figure 10: In 2015-16, there were more transfer students with a DTA or no transfer degree than with a major-specific transfer degree for all bachelor's degree majors and major areas at the public four-year institutions<sup>aa</sup>

Students with major-specific transfer degrees earned varying levels of excess credits beyond the 180 credits typically required for a bachelor's degree at the public four-year institutions. bb Measuring excess credits, or the number of credits earned beyond those required by a degree, is another way to evaluate transfer effectiveness. 10 Although this report measures transfer effectiveness by comparing median credits to degree for transfer students and direct entry students, it also found that all student entry types (including direct entry) earned more median credits beyond the 180 credits typically required for a bachelor's degree.

As an example, Figure 11 shows the median excess credits earned by the different transfer student types for each major or major area at the public four-year institutions in 2015-16. It also includes the median credits to degree for direct entry students as a comparison. The graph shows that business bachelor's degree earners who entered with a Business DTA/MRP earned the least median excess credits and engineering bachelor's degree earners who entered with a DTA earned the most median excess credits. Because excess credits were not the focus of this report, further examination into these results is needed in order to understand the significance of the data.

 $<sup>^{\</sup>alpha\alpha}$  The small number of students who earned some combination of an AS-T 1, AS-T 2, and DTA (including MRPs based on those degrees) appear more than once.

bb Most bachelor's degrees at public four-year institutions require 180 quarter credits (or 120 semester credits), but there are some exceptions. For example, dual degrees require 225 quarter credits.

90 Jumber of median credits in excess of 180 earned toward bachelor's 77 80 70 60 degree in 2015-16 50 4241 40 40 35 34 323133 29<sup>31</sup> 31 30 25 2221 20 20 1716 20 10 0 AS-T 2 majors Biology **Business** Enaineerina AS-T 1 majors Bachelor's degree major or major area ■ Direct Entry ■ Entered with associated MRP or AS-T ■ Entered with DTA ■ CTC transfer without transfer degree ■ Non-CTC transfer without transfer degree

Figure 11: Bachelor's degree earners at the public four-year institutions took anywhere from 5 to 77 more median credits beyond the 180 typically required for a bachelor's degree in 2015-16, depending on their entry type and bachelor's degree major/major area<sup>cc</sup>

### Median credits to degree at ICW institutions

There are two noted differences between the public four-year analysis and the ICW analysis. The ICW portion of the report examines transfer outcomes for only three transfer degree types: Business and Pre-Nursing DTA/MRPs and the AS-T 2. The other transfer degree types did not appear in the data or had only one student participant. There were also a number of bachelor's degree earners who had a transfer degree, but the type was either unknown or not part of the study (such as the Elementary Education DTA/MRP). These are included in the analysis as an additional entry type called "Unknown/Other Transfer Degree." Because both cohorts had similar results for most bachelor's degree majors and major areas, the following figures primarily focus on the 2015-16 cohort. Where results are different or useful for discussion, both cohorts are included. All accompanying 2014-15 figures are in Appendix D.

 $<sup>^{</sup>cc}$  The small number of students who earned some combination of an AS-T 1, AS-T 2, and DTA (including MRPs based on those degrees) appear more than once.

More than one-quarter of ICW bachelor's degree earners were transfer students. To understand the composition of all ICW graduates, this report calculates the entry type proportions for each study year. For both years, more than one-quarter of ICW graduates were transfer students as shown in Figure 12. About half of transfer students came from CTCs, and around 30 percent of transfer students entered with a transfer degree. Of the known transfer degrees held by entering transfer students, the DTA was the most popular, although more students fell in the "Unknown/Other Transfer degree" category. Figure 13 shows the proportion of entry types for 2015-16 ICW graduates as an example.

2015-16 29% 72% Academic Year Direct Entry Students Transfer Students 2014-15 73% 27% 0% 20% 40% 60% 80% 100% Proportion of ICW bachelor's degree earners

Figure 12: More than one-quarter of ICW graduates in 2014-15 and 2015-16 were transfer students

Source: WSAC staff analysis of ICW bachelor's degree earners in academic years 2014-15 and 2015-16 from data received in June 2018 from participating ICW institutions.

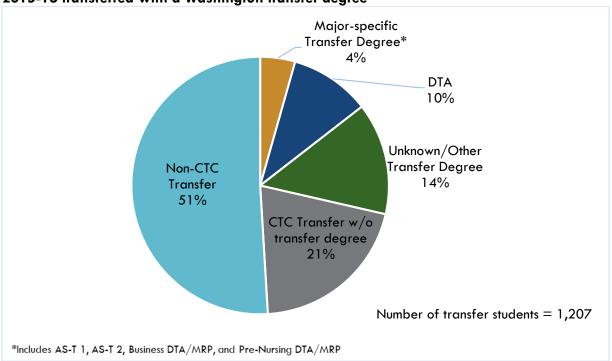


Figure 13: Almost 30 percent of transfer students who earned an ICW bachelor's degree in 2015-16 transferred with a Washington transfer degree

Source: WSAC staff analysis of ICW bachelor's degree earners in academic year 2015-16 from data received in June 2018 from participating ICW institutions.

Median credits to degree for all ICW bachelor's degree earners. When analyzing the entire study population, regardless of major or major area, ICW graduates who entered their institution directly had a little over 200 median credits to degree in both study years. dd Most transfer students had fewer median credits to degree than direct entry students. Transfer students with a Business DTA/MRP earned the fewest median credits to degree with 185. Transfer students who came from a non-CTC earned the most at 209 median credits. Figure 14 shows the median credits to degree earned by each entry type for 2015-16.

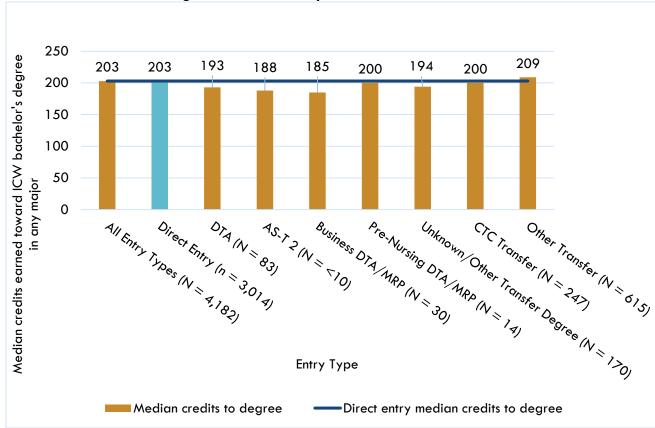


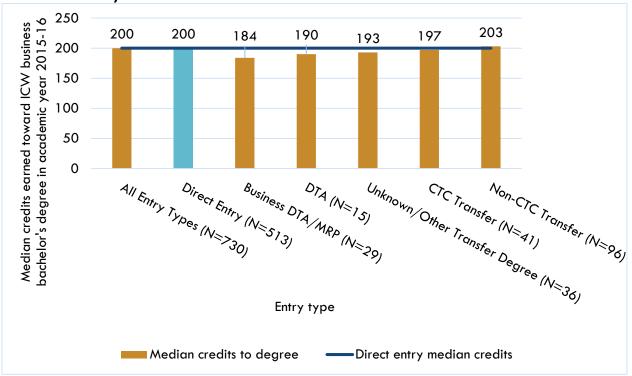
Figure 14: Most transfer students who earned ICW bachelor's degrees in any major earned fewer median credits to degree than direct entry students in 2015-16

Source: WSAC staff analysis of ICW bachelor's degree earners in academic year 2015-16 from data received in June 2018 from participating ICW institutions.

Transfer students with a Business or Pre-Nursing DTA/MRP who earned an ICW bachelor's degree in their associated major had fewer median credits to degree than direct entry students. To better understand major-specific transfer degree effectiveness at ICW institutions, the three transfer degrees that had enough participating students to study are reviewed next. For both study years, transfer students with a Business DTA/MRP earned considerably fewer median credits toward a business bachelor's degree than direct entry students. Transfer students with a Pre-Nursing DTA/MRP who earned a BSN earned just slightly fewer credits to degree compared to direct entry students. As an example, Figure 15 shows the median credits earned toward an ICW business degree in 2015-16 by all entry types. Figure 16 does the same for ICW BSN graduates.

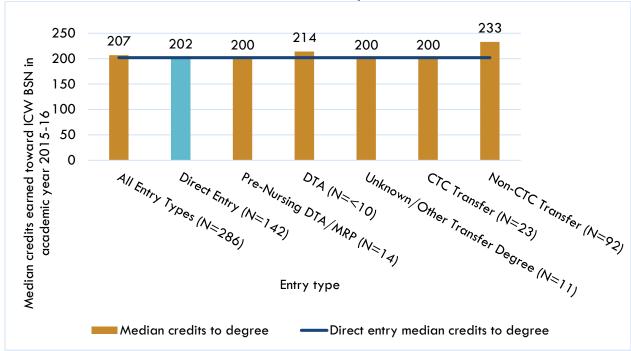
<sup>&</sup>lt;sup>dd</sup> ICW institutions have varying minimum credit requirements for their bachelor's degrees. See Appendix B for the minimum credits required by each institution in the report. The median number of quarter credits required for a bachelor's degree across all ICW institutions in the report is 185 credits.

Figure 15: In 2015-16, transfer students with a Business DTA/MRP who earned an ICW business degree had 16 fewer median credits to degree than students who entered the ICW institution directly



Source: WSAC staff analysis of ICW bachelor's degree earners in academic year 2015-16 from data received in June 2018 from participating ICW institutions.

Figure 16: In 2015-16, students with a Pre-Nursing DTA/MRP earned a comparable number of median credits toward their ICW BSN as direct entry students



Source: WSAC staff analysis of ICW bachelor's degree earners in academic year 2015-16 from data received in June 2018 from participating ICW institutions.

The AS-T 2 performed differently in the two study years when compared to direct entry students at the ICW institutions. The AS-T 2 had inconsistent results between the two study years. In 2014-15, students with an AS-T 2 who went on to earn an AS-T 2-related bachelor's degree earned four more median credits than direct entry students. In 2015-16, AS-T 2 students earned 17 fewer median credits than direct entry students (Figure 17). More years of analysis is needed in order to discover a trend, especially since there were fewer than 10 AS-T 2 students in each cohort.

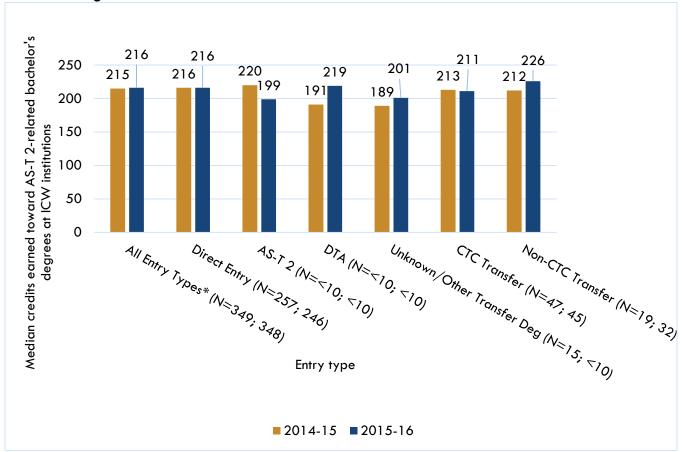


Figure 17: Transfers with an AS-T 2 earned the most median credits toward an AS-T 2-related bachelor's degree in 2014-15 and the least median credits in 2015-16

Source: WSAC staff analysis of ICW bachelor's degree earners in academic years 2014-15 and 2015-16 from data received in June 2018 from participating ICW institutions.

For all three majors and major areas, more transfer students entered the ICW institution without a transfer degree than with the associated major-specific transfer degree. Although students with a major-specific transfer degree tended to have fewer median credits to their associated bachelor's degree than students without a transfer degree, each ICW major and major area had more transfer students without a transfer degree than with the associated major-specific transfer degree. The proportions vary across majors and major areas as shown in Figure 18. It includes the proportions of the different transfer student entry types for 2015-16 ICW bachelor's degree earners.

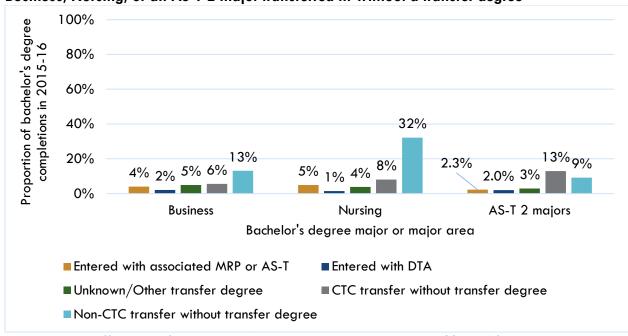


Figure 18: Most transfer students who went on to earn a 2015-16 ICW bachelor's degree in Business, Nursing, or an AS-T 2 major transferred in without a transfer degree

Source: WSAC staff analysis of ICW bachelor's degree earners in academic year 2015-16 from data received in June 2018 from participating ICW institutions.

# **Transfer Updates**

In addition to comparing the median credits that transfer students and direct entry students earned toward their bachelor's degrees, this report also includes transfer-related updates since the 2017 report. Updates cover new and updated transfer associate degrees, as well as other transfer efficiency improvements data.

### New statewide transfer associate degrees

The 2017 transfer report described the development of three new transfer degrees:

- Nursing DTA/MRP
- Computer Science DTA/MRP
- Music DTA/MRP

This report's populations did not have any students who earned these newly launched transfer degrees, but the 2021 transfer report will likely include them.

### Updated statewide transfer associate degrees

Transfer degrees are reviewed regularly by statewide workgroups. In 2017, JTC developed a review schedule for all MRPs. Transfer degree updates since the 2017 transfer report include:

- In 2018, a cross-sector workgroup reviewed and updated the Business DTA/MRP. Updates
  included clarifying advising notes, adding new institutional requirements, reflecting CTC
  course name changes, and broadening electives.
- The Pre-Nursing DTA/MRP is currently under review, and the Nursing DTA/MRP will be reviewed after the Pre-Nursing DTA/MRP review is complete.
- The Computer Science DTA/MRP will begin review in 2019.

- The Washington Council for Engineering and Related Technical Education has proposed changes to the Engineering AST-2/MRP. An updated agreement will likely be available in 2019.
- The Technology DTA/MRP was eliminated in 2017 due to low participation.
- The Engineering Technology AS-T 2/MRP is in the removal process due to low participation.
   It will likely be eliminated in 2019.

## Other data on transfer efficiency improvements

### Reverse Credit Transfer

Reverse credit transfer allows eligible students to earn their associate degree after transferring to a four-year institution. Students who transfer to a four-year institution before completing their associate degree can complete any remaining requirements as part of their bachelor's program and transfer credits back to the CTC to receive their associate degree. Reverse credit transfer is one tool that many states are using to reach their postsecondary education attainment goals.

For years, many Washington institutions offered reverse transfer on an unofficial basis. In 2016, the Legislature passed Senate Bill 6354, which required all public four-year institutions to develop a reverse transfer plan by December 31, 2017 that included:

- A policy allowing eligible students (students who transferred 60 or more quarter credits from a Washington CTC) to transfer credits back to a Washington CTC for associate degree completion.
- Procedures for notifying eligible students.

All six institutions are currently in compliance with the law. More information is on SBCTC's website at www.sbctc.edu/colleges-staff/programs-services/transfer/reverse-articulation.

### Transfer Institute

In summer 2017, the Aspen Institute, the Community College Research Center, and Public Agenda, along with Washington transfer partners, hosted a workshop on improving transfer outcomes. Over 100 professionals from participating CTCs, public four-year institutions, and ICW institutions came together to discuss transfer, share data, and ultimately identify ways to strengthen the Washington transfer experience.<sup>11</sup>

After the institute, 21 institutional teams completed action plans. In addition to building stronger relationships with partner institutions, the action plans all shared the following goals:

- Develop Guided Pathways and other related processes with partner institutions to be in better academic and procedural alignment
- Increase the number and percentage of:
  - Transfer students at the institution.
  - Students leaving the two-year institution transfer ready and with an associate degree.
  - Transfer students earning their bachelor's degree in a timely fashion.
- Achieve more equitable transfer student outcomes, especially across socioeconomic status.
- Make the transfer student experience clearer, more efficient, and more satisfactory to the students themselves.<sup>12</sup>

ee WCERTE is a voluntary organization of Washington colleges and universities that are involved with engineering or engineering-related technical education.

Based on these action plans, JTC and other statewide groups proposed a list of possible ways to support institutions. It included creating a strategic plan to improve transfer outcomes; collecting, analyzing, and sharing transfer student data; supporting Guided Pathways; conducting transfer student focus groups; and providing more engagement opportunities for diverse institutional representatives.<sup>13</sup>

Finally, the work at the institute contributed to a handbook for other states and institutions to use.<sup>14</sup> More 2019 meetings are scheduled to continue this important work.

### Conclusion

The findings in this report suggest that some of Washington's statewide major-specific transfer degrees provide effective pathways that help students meet their educational goals. Specifically, the report found that transfer students with certain major-specific transfer degrees who go on to complete an associated bachelor's degree earn a comparable amount of credit as students who enter the four-yea institution directly. Although the data are descriptive, the report also provides insights for improvements that continue to be the focus of discussion among transfer partners and within institutional sectors.

As transfer degree awards rise, strong transfer policy will continue to be an important tool in meeting the state's postsecondary educational attainment goals. The steadfast commitment by higher education institutions, agencies, and organizations to improving transfer outcomes in Washington is a key factor in this work. These groups are collaborating effectively to create and improve transfer associate degree agreements, to support reverse credit transfer initiatives, and to regularly discuss transfer in Washington.

## Areas for future work

Median credits earned toward a bachelor's degree make up only one chapter of the Washington transfer story. They do not tell us transfer rates, bachelor's degree attainment rates for transfer students, time to degree, or the effects of transfer on specific populations. However, they are a useful starting place in studying transfer trends in Washington.

**Additional research.** The results in this report and future reports are descriptive only. The reasons behind the results can only be found through additional quantitative and qualitative research. Potential research may focus on why some transfer degrees have fewer median credits than others, why some CTC students transfer without a transfer degree, and what is the future role of the DTA. Partnering with institutions and other agencies could help answer some of these questions, and to figure out if these trends affect certain student populations more than others.

Use an equity lens to inform transfer policies. Using research that puts all transfer students into one group often creates transfer policies that may not address inherent inequities. <sup>15</sup> For example, although limited, available research indicates that transfer inefficiencies increase for students of color. <sup>16</sup> In Washington, most students of color who intend to transfer have lower transfer rates and bachelor's completion rates (if they do transfer) than white students. <sup>17</sup> They also are less likely to earn a credential from the CTCs. <sup>18</sup> This is especially important considering the growing proportion of students of color awarded CTC associate degrees in Washington. <sup>19</sup> In order to inform state policies that aim to close the opportunity gap, future reports should not only look at results for entire populations, but also subpopulations, such as those defined by race/ethnicity, socioeconomic status, gender, and age. This research will help the state determine if its statewide transfer degrees are supporting all students, regardless of their situation or background.

Other student populations deserve further study. Running Start participants continue to make up a larger portion of transfer degree earners. For example, they earned 18 percent of the transfer degrees awarded in academic year 2017-18. In 2013-14, they earned 11 percent of transfer degrees. In this report, Running Start students who earned a transfer degree and then attended a four-year institution immediately after high school were included in the direct entry cohort. This is how they are classified at public four-year institutions for admission purposes. However, due to their increasing numbers, it may be informative to study this group separately from both their high school and CTC counterparts considering they straddle the direct entry/transfer student divide.

One metric that was missing in this report was the median credits earned by students who complete a CTC bachelor's degree. The CTCs award bachelor of applied science (BAS) degrees and BSN degrees. Like transfer degrees, the number of CTC bachelor's degrees awarded has been increasing.<sup>21</sup> Since they are completely composed of transfer students (they are all bachelor's degree completion programs), their role in transfer warrants more study, especially as the CTCs continue to regularly add new degrees.

Another interesting subpopulation are students who have earned either a certificate or a technical associate degree. These credentials are designed to train a student to enter the workforce immediately. Since more than one-third of projected job openings in Washington will require at least a bachelor's degree, it will be important to study this population's transfer outcomes.<sup>22</sup>

Unfortunately, this report did not examine median credits to degree for transfer students with a Pre-Nursing DTA/MRP who earned a BSN at public four-year institutions due to data limitations. This MRP has been the second most-popular major-specific transfer degree since at least 2009, and it has seen an increase in awards of 25 percent since 2013-14.<sup>23</sup> Furthermore, with the addition of the Nursing DTA/MRP, almost 900 nursing transfer degrees were awarded in 2017-18.<sup>24</sup> Clearly, more equity-focused research into the nursing transfer pathway is important considering the strong demand for health professionals in Washington, particularly Registered Nurses.<sup>25</sup>

Finally, this report did not take into account the effect of attending multiple institutions on transfer. The transfer path toward a bachelor's degree does not look the same for all CTC transfer students – many attend more than one CTC and one four-year institution. For example, the National Student Clearinghouse found that 15 percent of Washington students who began college in Fall 2011 at a CTC transferred three or more times over a six-year period.<sup>26</sup>

Financial effect of transfer and excess credits. The report finds that transfer students earned varying levels of credits beyond the 180 typically required at public four-year institutions. For example, transfer students with an Engineering AS-T 2/MRP who earned engineering bachelor's degrees took 40 excess median credits, which is almost equal to one year of full-time study. The reasons for excess credits are unknown, and the topic requires more investigation before drawing conclusions. One important reason for examining this issue further is that in Washington, students in 180-credit bachelor's degree programs are generally no longer eligible for state financial aid, such as the State Need Grant, after they attempt 45 credits beyond the minimum required.<sup>99</sup> Studying the effect of transfer on excess credits is one way to address the affordability challenge in meeting the state's postsecondary educational attainment goal.

.

ff Running Start is a dual enrollment program in which high school students take college-level courses, including transferable courses, for both high school and college credit

gg As defined in Washington Administrative Code 250- 20-011 (8)(b).

**Adult reengagement and transfer.** To help meet the state's postsecondary educational attainment goal, WSAC is developing an adult reengagement initiative to support adults with some credit but no degree in completing a credential. hh Transfer policy will be a key component of this work considering all of these students have some type of credit. For example, returning adults who have enough CTC credits and meet other requirements may be eligible to earn their associate degree through reverse credit transfer. Some states have seen their associate degree attainment increase due to reverse credit transfer. Another area of transfer-related policy that affects adult returners is academic credit for prior learning. Awarding credit for prior learning, such as that acquired through work, military, and other experiences is one strategy for supporting Washington's adult learners.

**Longitudinal analysis.** Finally, the intent of this report is to be a launching pad for future reports. It is anticipated that the 2021 report will have four years of data to analyze. This will allow for patterns and trends in transfer degree effectiveness to emerge. This data could potentially influence the transfer degree landscape by informing decisions about creating new degrees, updating and improving current degrees, or eliminating degrees.

Washington Student Achievement Council

hh See wsac.wa.gov/adult-reengagement for more information.

## **Sources**

Washington Student Achievement Council, et al. "A Skilled and Educated Workforce," 2017.

- <sup>2</sup> Shapiro, D., Dundar, A., Huie, F., Wakhungu, P.K., Yuan, X., Nathan, A. and Hwang, Y. "Tracking Transfer: Measures of Effectiveness in Helping Community College Students to Complete Bachelor's Degrees (Signature Report No. 13)." Herndon, VA: National Student Clearinghouse Research Center. September 2017. https://nscresearchcenter.org/wp-content/uploads/SignatureReport13\_corrected.pdf.
- <sup>3</sup> Wyner, J., Deane, K.C., Jenkins, D. and Fink, J. "The Transfer Playbook: Essential Practices for Two- and Four-Year Colleges." The Aspen Institute College Excellence Program and Community College Research Center. 2016. https://assets.aspeninstitute.org/content/uploads/2016/05/aspencorc\_transferplaybook\_05-2016.pdf.
- <sup>4</sup> Shapiro, D., Dundar, A., Ziskin, M., Chiang, Y. C., Chen, J., Harrell, A., and Torres, V. "Baccalaureate attainment: A national view of the postsecondary outcomes of students who transfer from two-year to four-year institutions (Signature Report No. 5)." Herndon, VA: National Student Clearinghouse Research Center. 2013. https://nscresearchcenter.org/wp-content/uploads/SignatureReport5.pdf.
- <sup>5</sup> Education Research and Data Center. "Statewide Public Four-Year Dashboard: Undergraduate and Continuation Rates." Accessed December 2018. https://erdc.wa.gov/data-dashboards/public-four-year-dashboard#graduation-continuation.
- <sup>6</sup> Prince, David. "The Role of Transfer in the Attainment of Baccalaureate Degrees at Washington Public Bachelor's Degree Institutions Class of 2016," 2018. Olympia, WA: State Board for Community and Technical Colleges. https://www.sbctc.edu/resources/documents/colleges-staff/research/transfer-research/18-3-role-of-transfer-2018.pdf.
- Washington Student Achievement Council. "Articulation and Student Transfer: House Bill 2382 Progress Report," 2005.
- <sup>8</sup> State Board for Community and Technical Colleges. "Credentials Awarded Dashboard."
- <sup>9</sup> State Board for Community and Technical Colleges. "Transfers Dashboard."
- <sup>10</sup> Fink, John, Davis Jenkins, Elizabeth Kopko, and Florence Xiaotao Ran. "Using Data Mining to Explore Why Community College Transfer Students Earn Bachelor's Degrees With Excess Credits," February 2018. https://ccrc.tc.columbia.edu/media/k2/attachments/using-data-mining-explore-why-community-college-transfer-students-earn-bachelors-degrees-excess-credits.pdf.
- <sup>11</sup> The Aspen Institute College Excellence Program, Public Agenda, and Community College Research Center. "Washington Transfer Institute: Notes and Next Steps." 2017.
- <sup>12</sup> The Aspen Institute College Excellence Program, Public Agenda, and Community College Research Center. "Washington Transfer Institute: Summary of Institutional Action Plans." 2017.
- 13 Ibid.
- 14 The Aspen Institute, College Excellence Program. "Tackling Transfer, A Guide to Convening Community Colleges and Universities to Improve Transfer Student Outcomes." Accessed December 2018. https://drive.google.com/file/d/1rmIDxPjoEWfTjvDRjg-S4j4SwNakr4BM/view.
- <sup>15</sup> Meza, et al. "Including Racial Equity as an Outcome Measure in Transfer Research," February 2018.

- <sup>16</sup> Crisp, Gloria, and Anne-Marie Nuñez. 2014. "Understanding the Racial Transfer Gap: Modeling Underrepresented Minority and Nonminority Students' Pathways from Two-to Four-Year Institutions." The Review of Higher Education 37 (3): 291–320. https://doi.org/10.1353/rhe.2014.0017.
- <sup>17</sup> Greene, Teresa. "The Characteristics and Experiences of Students Who Transfer to Four-year Institutions," 2017. Olympia, WA: Education Research and Data Center. https://erdc.wa.gov/publications/student-outcomes/characteristics-and-experiences-students-who-transfer-four-year.
- <sup>18</sup> DuPree, Devin. "Why Focus on Equity," September 2018. Olympia, WA: State Board for Community and Technical Colleges. https://www.sbctc.edu/resources/documents/colleges-staff/research/research-briefs/why-focus-on-equity-issue-brief.pdf.
- 19 "College Credential Completion by Student Race/Ethnicity and Programs of Study." Community College Research Center, accessed December 2018. https://ccrc.tc.columbia.edu/easyblog/data-viz-trends-college-completion.html.
- <sup>20</sup> Kaikkonen, Darby, email message to author, December 2018.
- <sup>21</sup> State Board for Community and Technical Colleges. "Credentials Awarded Dashboard."
- <sup>22</sup> Washington Student Achievement Council, et al. "A Skilled and Educated Workforce," 2017.
- 23 "Academic Year Reports." Washington State Board for Community and Technical Colleges Academic Year Reports. Accessed December 2018. https://www.sbctc.edu/colleges-staff/research/annual-reports-archive/academic-year.aspx.; "Transfers Dashboard." Accessed February 6, 2019. https://www.sbctc.edu/colleges-staff/research/data-public/transfers-dashboard.aspx.
- <sup>24</sup> "Transfers Dashboard." Accessed February 6, 2019. https://www.sbctc.edu/colleges-staff/research/data-public/transfers-dashboard.aspx.
- <sup>25</sup> Washington Student Achievement Council, et al. "A Skilled and Educated Workforce," 2017.
- <sup>26</sup> Shapiro, D., Dundar, A., Huie, F., Wakhungu, P.K, Bhimdiwali, A., Nathan, A. and Youngsik, H. "Transfer and Mobility: A National View of Student Movement in Postsecondary Institutions, Fall 2011 Cohort (Signature Report No. 15)." July 2018. Herndon, VA: National Student Clearinghouse Research Center. https://nscresearchcenter.org/wp-content/uploads/Signature-Report-15.pdf.
- <sup>27</sup> Taylor, J. I. and Cortes-Lopez, E. "Reverse Credit Transfer: Increasing State Associate's Degree Attainment (Credit When It's Due Data Note No. 9)." April 2017. Seattle, WA: Community College Research Initiatives, University of Washington. https://s3-us-west-2.amazonaws.com/uw-s3-cdn/wp-content/uploads/sites/158/2018/08/23173640/CWID-DataNote9.pdf.

# Appendix A: Institutions included in report

### Public four-year institutions

- Central Washington University
- Eastern Washington University
- The Evergreen State College
- University of Washington
- Washington State University
- Western Washington University

# Independent Colleges of Washington institutions

- Gonzaga University
- Heritage University
- Pacific Lutheran University
- Saint Martin's University
- Seattle Pacific University
- Seattle University
- Walla Walla University
- Whitworth University

### Public community and technical colleges

- Bates Technical College
- Bellevue College
- Bellingham Technical College
- Big Bend Community College
- Cascadia College
- Centralia College
- Clark College
- Clover Park Technical College

- Columbia Basin College
- Edmonds Community College
- Everett Community College
- Grays Harbor College
- Green River College
- Highline College
- Lake Washington Institute of Technology
- Lower Columbia College
- North Seattle College
- Olympic College
- Peninsula College
- Pierce College Fort Steilacoom
- Pierce College Puyallup
- Renton Technical College
- Seattle Central College
- Shoreline Community College
- Skagit Valley College
- South Puget Sound Community College
- South Seattle College
- Spokane Community College
- Spokane Falls Community College
- Tacoma Community College
- Walla Walla Community College
- Wenatchee Valley College
- Whatcom Community College
- Yakima Valley College

# Appendix B: Data sources, definitions, calculations, limitations, and deletions

### **Public four-year institutions**

### Data sources

Public CTC and bachelor's degree completion data came from the Mutual Research Transcript Exchange (MRTE+) database, which is housed at the State Board for Community and Technical Colleges (SBCTC). This database combines CTC enrollment data from the SBCTC Data Warehouse and four-year institution data from the Public Centralized Higher Education Enrollment System (PCHEES), which is maintained by the Education Research and Data Center (ERDC) in the Office of Financial Management. ERDC provides an identity-matched crosswalk to SBCTC, which allows MRTE+ to link student unit records between and among public colleges and universities. The data in MRTE+ is anonymized student level data. CTC data includes degree completion records from academic year 2004-05 to academic year 2015-16. Four-year institutional completion records are from academic year 2007-08 to academic year 2015-16. Four-year institutional completion records in May 2018 that used MRTE+ to calculate median credits to bachelor's degree for public four-year degrees awarded in academic year 2015-16. Results from this report are slightly different due to differences in population and entry type definitions.

Transfer degrees awarded over time data came from SBCTC's Transfers After College Status Dashboard.kk It was used because it has more current CTC data than MRTE+. It includes transfer degrees earned through academic year 2017-18.

## Entry type definitions

Entry	Definition
Type	
Direct	Includes two sets of bachelor's completion records:
entry	1. Low Credits Transferred: Records with less than 40 transferred credits and no transfer degree earned before entering the four-year institution where bachelor's degree was earned (transfer degree could have been earned after transfer)  2. High School Direct: Records in which first term of enrollment at the four-year institution where bachelor's degree was earned was in the summer or fall term immediately following high school graduation (regardless of number of transferred credits). First term of enrollment does not include terms where student was enrolled in dual credit. This could include students who earned a transfer degree prior to entry, likely through Running Start.
With DTA	Bachelor's completion records where student earned a DTA prior to entering the four-year institution where bachelor's degree was earned. Does not include students
DIA	who entered directly from high school as defined in the Direct Entry category.
With	Bachelor's completion records where student earned an MRP or AS-T prior to
MRP or	entering the four-year institution where bachelor's degree was earned. Does not
AS-T	include students who entered directly from high school as defined in the Direct Entry category.

<sup>&</sup>quot;State Board for Community and Technical Colleges, "The Role of Transfer in the Attainment of Baccalaureate Degrees at Washington Public Bachelor's Degree Institutions—Class of 2016" (report, Olympia, WA, 2018). "SBCTC's report did not include international students and students who earned more than one bachelor's degree. It also did not state whether it kept or removed records with bachelor's degrees that had fewer than 180 quarter credits.

kk https://www.sbctc.edu/colleges-staff/research/data-public/transfers-dashboard.aspx

Entry Type	Definition
CTC	Bachelor's completion records that met both of the following:
Transfer	<ol> <li>40 or more transferred credits and no transfer degree earned before entering the four-year institution where bachelor's degree was earned (transfer degree could have been earned after transfer). Does not include students who entered directly from high school as defined in the Direct Entry category.</li> <li>Attempted 20 or more academic (100-level or higher) quarter credits at the same CTC. Academic credits may be from workforce education courses.</li> </ol>
Non-CTC	Bachelor's completion records that met both of the following:
Transfer	<ol> <li>40 or more transferred credits and no transfer degree earned before entering the four-year institution where bachelor's degree was earned (transfer degree could have been earned after transfer). Does not include students who entered directly from high school as defined in the Direct Entry category.</li> <li>Attempted less than 20 academic (100-level or higher) quarter credits at the same CTC. Academic credits may be from workforce education courses.</li> </ol>

### **Calculations**

- All semester credits were converted to quarter credits by multiplying semester credits by 1.5.
- The "academic year" refers to the year that starts in the summer quarter or semester and ends in the spring quarter or semester.
- A "credits to degree" variable was created to represent the total credits earned toward the bachelor's degree. It was the sum of "institutional credits earned" and "non-institutional credits earned," which are found in the MRTE+ student completions data.
- To find out which students attempted 20 or more CTC credits prior to transfer, the "CTC Transfer" and "Non-CTC Transfer" entry types used two variables found in the MRTE+ student term data: "student type" and "cumulative college level credits." The last term prior to entering the four-year institution that had a student type of "T" (for transfer) was reviewed for every bachelor's completion record with 40 or more transferred credits and no transfer degree (and not direct from high school). The number of credits found in the "cumulative college level credits" field was used to find out how many CTC credits were attempted. The MRTE+ data dictionary defines this variable as including all college level credits earned at an institution. However, by comparing this field to data in the MRTE+ course data, WSAC found that this field actually includes the number of CTC credits attempted.

### Limitations

- Bachelor's completion records do not indicate when or where transfer credit was earned.
  This means it is possible for the "CTC Transfer" and "Non-CTC Transfer" entry types to
  include records where the student did not actually earn 40 or more credits prior to entry
  into the four-year institution where the bachelor's degree was earned.
- Bachelor's completion records do not include the number of credits that a student attempted to transfer from their previous institution. This means credit loss cannot be calculated.
- The "Direct Entry-High School Direct" entry type did not capture students who graduated high school in fall term and immediately enrolled in a four-year institution in the winter or spring term of the following year.

- Some records were either missing high school graduation dates or had obviously incorrect high school graduation dates (1912, 1913, or 1914). It is possible that some of these records were captured in "CTC Transfer," "Non-CTC Transfer," or one of the transfer degree entry categories even though they should have been sorted into the "Direct Entry-High School Direct" entry category. Less than one percent of the records with a high school graduation date error are presumed to be incorrectly sorted, based on the number of records where the student was younger than eighteen years old. This age was used as a proxy to determine the scope of the issue.
- The "CTC Transfer" type does not capture students who attempted 20 or more CTC credits across two or more CTCs, but attempted less than 20 credits at each campus.
- The attempted CTC credits used to determine the "CTC Transfer" and "Non-CTC Transfer" entry types may or may not have been earned and may or may not have been transferred to the four-year institution where the bachelor's degree was earned.
- The Pre-Nursing DTA/MRP and its associated bachelor's degree, the Bachelor of Science in Nursing (BSN), was not studied because the Washington State University data did not indicate if the BSN was earned at what is called a "pre-licensure" BSN program or a Registered Nursing (RN) to BSN program. The Pre-Nursing DTA/MRP prepares students for pre-licensure BSN programs and the Nursing DTA/MRP prepares students for RN to BSN programs.

### Deletions

The following records were deleted prior to analyzing the data:

- Duplicate records.
- Records with less than 180 credits in the "credits to degree" field, since bachelor's degrees typically require 180 quarter credits.
- Records where a student had two or more of the same transfer degree.
- Records where a student had a DTA and a DTA/MRP (i.e. DTA and Business DTA/MRP) or an AS-T-2 and Engineering AS-T 2/MRP. Because an MRP is either a DTA or an AS-T with a specific course plan, earning both an MRP and a DTA or an MRP and an AS-T is considered to be earning the same degree. It was unclear which entry type the record then belonged to, so it was eliminated. Students who earned multiple transfer degrees that weren't related (i.e. a DTA and an AS-T 1) were included.
- Records that did not have any four-year institutional enrollment data. The first term of entry
  could not be determined without this data.

Council of Presidents, "Accelerated Degree Programs Work Group Report" (report, Olympia, WA, 2016), 7.

### **ICW** institutions

#### Data source

Participating ICW institutions sent data directly to WSAC in June 2018. The requested data was anonymized student level data for individual students who entered the institution as a bachelor's degree seeking student in Summer Term 2010 or after.

## Entry type definitions

Entry	Definition
Type	
Direct	Includes two sets of student records:
entry	<ol> <li>Low Credits Transferred: Records with less than 40 transferred credits and no transfer degree earned before entering the ICW institution (transfer degree could have been earned after transfer)</li> <li>High School Direct: Records where first term of enrollment at the ICW was in the summer or fall term immediately following high school graduation (number of credits could be less than, equal to, or more than 40). This could include students</li> </ol>
VA/*+1	who earned a transfer degree prior to entry, likely through Running Start.
With DTA	Students who earned a DTA prior to entering the ICW institution. Does not include students who entered directly from high school as defined in the Direct Entry category.
With MRP or AS-T	Students who earned an MRP or AS-T prior to entering the ICW institution. Does not include students who entered directly from high school as defined in the Direct Entry category.
CTC Transfer	Student records that meet both of the following:  1. 40 or more transferred credits and no transfer degree earned before entering the ICW institution (transfer degree could have been earned prior to transfer).  Does not include students who entered directly from high school as defined in the Direct Entry category.  2. Transferred 20 or more CTC credits.
Non-CTC Transfer	Student records that meet both of the following:  1. 40 or more transferred credits and no transfer degree earned before entering the ICW institution (transfer degree could have been earned prior to transfer).  Does not include students who entered directly from high school as defined in the Direct Entry category.  2. Transferred less than 20 CTC credits.

### **Calculations**

- All semester credits were converted to quarter credits by multiplying semester credits by 1.5.
- The "academic year" refers to the year that starts in the summer quarter or semester and ends in the spring quarter or semester.
- A "credits to degree" variable was created to represent the total credits earned toward the bachelor's degree. It was the sum of "institutional credits earned" and "non-institutional credits earned."
- The CTC credits used to determine the "CTC Transfer" and "Non-CTC Transfer" entry types were pulled from a variable called "CTC credits earned," which were reported by the ICW institutions.

### Limitations

- ICW data could not be crosswalked with CTC data, so the only CTC information included was provided by the ICW institution. If the institution did not collect or record CTC information, the data was not included.
- Bachelor's degree completion records for students who entered before Summer 2010 were not included in the data.
- Students who earned a bachelor's degree from two or more ICW institutions in the same academic year would appear in the data more than once since the data was not crosswalked among institutions.
- Bachelor's degree records do not include the number of credits that a student attempted to transfer from their previous institution. This means credit loss cannot be calculated.

### **Deletions**

- Duplicate records.
- Records with less than the minimum number of credits required for a bachelor's degree at each institution as follows:

ICW Institution Name	Minimum credits required for bachelor's degree
Heritage University	180 quarter credits (120 semester credits)
Saint Martin's University	
Seattle Pacific University	
Seattle University <sup>mm</sup>	
Whitworth University	189 quarter credits (126 semester credits)
Gonzaga University	192 quarter credits (128 semester credits)
Pacific Lutheran University	
Walla Walla University <sup>nn</sup>	

Source: Email to author from Etienne Rios, Independent Colleges of Washington, January 22, 2019.

 Bachelor's degree graduates who had a Nursing DTA/MRP. Any records with this degree are considered an error as it was introduced in 2016 and its first bachelor's degree graduates could not have occurred any earlier than academic year 2016-17.

mm Seattle University requires 135 quarter credits for its Bachelor of Arts in Humanities degree. Graduates with this degree who had less than 135 quarter credits were deleted.

<sup>&</sup>lt;sup>nn</sup> Walla Walla University requires 200 quarter credits for its Bachelor of Science in Engineering. Graduates with this degree who had less than 200 quarter credits were deleted.

# Appendix C: Bachelor's degree majors and associated CIP codes

Majors and CIP codes were chosen by finding the majors that students with associated transfer degrees earned in academic years 2014-15 and 2015-16. Some majors were included in more than one major area of study.

## Bachelor's degree majors associated with the AS-T 1

Biological sciences, environmental/resource sciences, chemistry, geology, and earth science

CIP Code	Title
030104	ENVIRONMENTAL SCIENCE
030601	WILDLIFE/WILDLANDS MGMT
260101	GENERAL BIOLOGY
260102	BIOMEDICAL SCIENCES, GENERAL
260202	BIOCHEMISTRY
260406	CELL/CELLULAR AND MOLECULAR BIOLOGY
260502	MICROBIOLOGY, GENERAL
260701	ZOOLOGY/ANIMAL BIOLOGY
260908	EXERCISE PHYSIOLOGY
261302	MARINE BIO & BIO OCEAN
261501	NEUROSCIENCE
261503	NEUROBIOLOGY AND ANATOMY
300101	BIOLOGICAL & PHYSICAL SCI
400501	GENERAL CHEMISTRY
400601	GEOLOGY/EARTH SCIENCE
400603	GEOPHYSICS AND SEISMOLOGY
400607	OCEANOGRAPHY, CHEM & PHY
400699	GEOLOGICAL AND EARTH SCIENCES/GEOSCIENCES, OT
512202	ENVIRONMENTAL HEALTH

### Bachelor's degree majors associated with the AS-T 2

Engineering, computer science, physics, and atmospheric sciences

CIP Code	Title
110103	INFORMATION TECHNOLOGY
110104	INFORMATICS
110701	COMPUTER SCIENCE
140201	AEROSPACE, AERONAUTICAL AND ASTRONAUTICAL ENG
140501	BIOMEDICAL/MEDICAL ENGINEERING
140701	CHEMICAL ENGINEERING
140702	CHEMICAL AND BIOMOLECULAR ENGINEERING
140801	CIVIL ENGINEERING, GENL
140901	COMPUTER ENGINEERING, GENL
141001	ELECT/ELECTR & COMM, GENL
141801	MATERIALS ENGINEERING
141901	MECHANICAL ENGINEERING
143501	INDUSTRIAL ENGINEERING
260202	BIOCHEMISTRY & BIOPHYSICS

300101	BIOLOGICAL & PHYSICAL SCI
400401	ATMOSPHERIC SCI & METEOR
400801	GENERAL PHYSICS

## Bachelor's degree majors associated with Biology DTA/MRP

CIP Code	Title
030104	ENVIRONMENTAL SCIENCE
260101	GENERAL BIOLOGY
260202	BIOCHEMISTRY & BIOPHYSICS
260406	CELL/CELLULAR AND MOLECULAR BIOLOGY
260701	ZOOLOGY/ANIMAL BIOLOGY
260801	GENETICS, GENERAL
260908	EXERCISE PHYSIOLOGY
300101	BIOLOGICAL & PHYSICAL SCI

# Bachelor's majors associated with the Business DTA/MRP

CIP Code	Title
520101	BUSINESS/COMMERCE GENERAL
520201	BUSINESS ADMIN & MGMT
520205	OPERATIONS MGMT & SUPV
520301	ACCOUNTING
520701	ENTREPRENEURSHIP
520801	FINANCE, GENL
520901	HOSPITALITY MGMT
521001	HUMAN RES MGMT/PERSONNEL
521101	INTL BUS/TRADE/COMMERCE
521201	MANAGEMENT INFORMATION SYSTEMS, GENERAL
521301	MANAGEMENT SCIENCE, GENERAL
521401	MARKETING MGMT

# Bachelor's degree majors associated with the Engineering AS-T 2/MRP

CIP Code	Title
140201	AEROSPACE, AERONAUTICAL AND ASTRONAUTICAL ENG
140501	BIOMEDICAL/MEDICAL ENGINEERING
140701	CHEMICAL ENGINEERING
140801	CIVIL ENGINEERING, GENL
140901	COMPUTER ENGINEERING, GENL
141001	ELECT/ELECTR & COMM, GENL
141801	MATERIALS ENGINEERING
141901	MECHANICAL ENGINEERING
143501	INDUSTRIAL ENGINEERING

# Bachelor's degree major associated with the Pre-Nursing DTA/MRP

CIP Code	Title
513801	REGISTERED NURSING

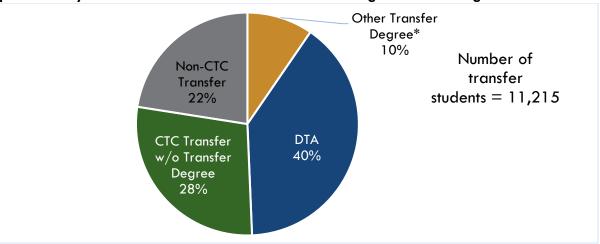
# **Appendix D: Additional figures**

The body of this report does not include all figures for all years and majors. Appendix D includes missing figures for academic year 2014-15. It also includes public four-year institution figures for Biology and AS-T 1-related bachelor's degrees.

### **Public four-year institutions**

### Academic year 2014-15 figures

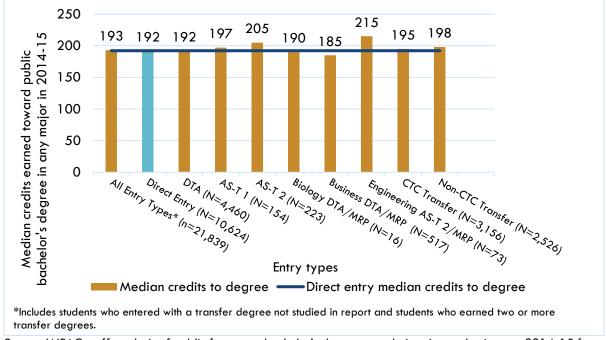
Figure 19: Half of the transfer students who earned a bachelor's degree in 2014-15 at a public four-year institution transferred in with a Washington transfer degree.



<sup>\*</sup>Includes students with two or more transfer degrees.

Source: WSAC staff analysis of public four-year bachelor's degree completions in academic year 2014-15 from Mutual Research Transcript Exchange (MRTE+) database.

Figure 20: For all public four-year bachelor's degrees earned in 2014-15, most entry types earned fewer than 200 median credits toward their bachelor's degree.



Source: WSAC staff analysis of public four-year bachelor's degree completions in academic year 2014-15 from Mutual Research Transcript Exchange (MRTE+) database.

Figure 21: Business degree earners who entered the public four-year institution with a Business DTA/MRP earned the fewest median credits toward their degree in 2014-15

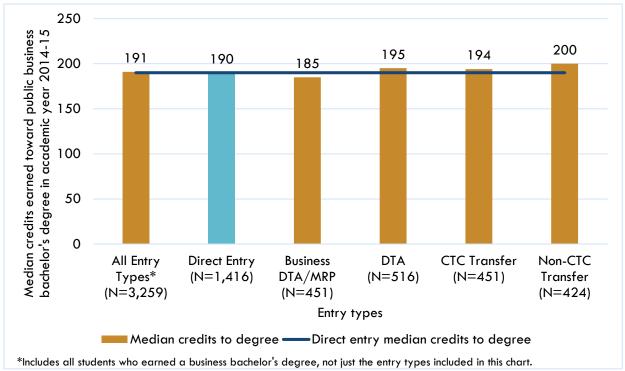
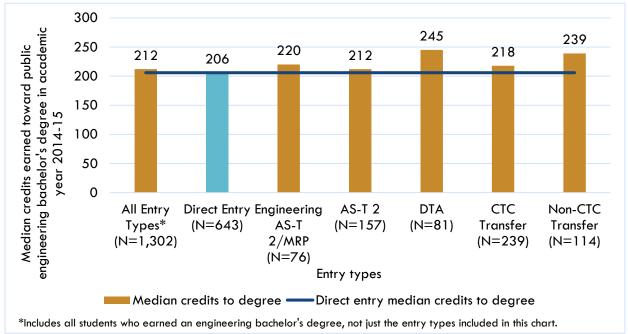


Figure 22: 2014-15 engineering bachelor's degree earners who entered with an Engineering AS-T 2/MRP earned more median credits toward their degree than those with an AS-T 2 or those who entered directly



Source: WSAC staff analysis of public four-year bachelor's degree completions in academic year 2014-15 from Mutual Research Transcript Exchange (MRTE+) database.

Figure 23: For most bachelor's degree majors, students with an MRP or AS-T earned fewer median credits toward their associated bachelor's degree major than students with a DTA or students without a transfer degree in 2014-15°°

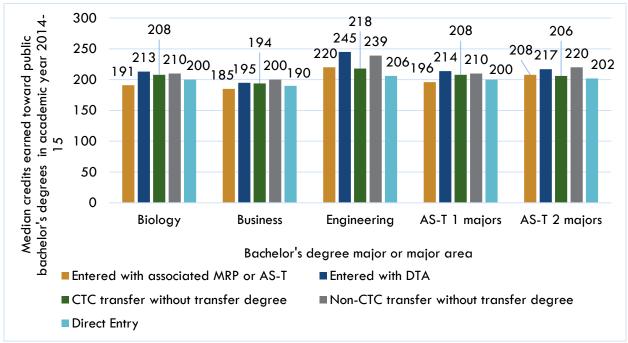
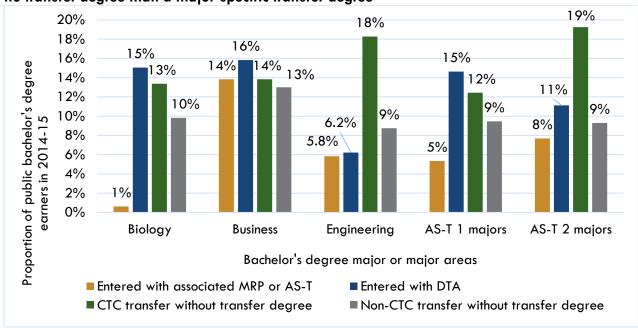


Figure 24: In 2014-15, all majors and major areas had more transfer students with a DTA or no transfer degree than a major-specific transfer degree\*x

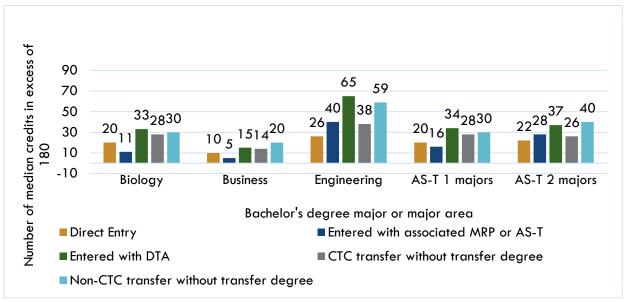


Source: WSAC staff analysis of public four-year bachelor's degree completions in academic year 2014-15 from Mutual Research Transcript Exchange (MRTE+) database.

Washington Student Achievement Council

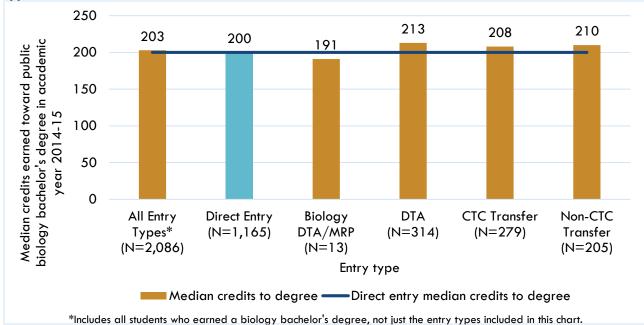
 $<sup>^{\</sup>circ\circ}$  The small number of students who earned some combination of an AS-T 1, AS-T 2, and DTA (including MRPs based on those degrees) appear more than once.

Figure 25: In 2014-15, transfer students took anywhere from 5 to 65 more median credits beyond the 180 typically required for a bachelor's degree, depending on their entry type and bachelor's degree major/major areapp



### 2014-15 and 2015-16 Biology and AS-T 1 figures

Figure 26: In 2014-15, biology bachelor's degree earners at the public four-year institutions with a Biology DTA/MRP earned the fewest median credits to degree compared to other entry types



Source: WSAC staff analysis of public four-year bachelor's degree completions in academic year 2014-15 from Mutual Research Transcript Exchange (MRTE+) database.

 $<sup>^{\</sup>rm pp}$  The small number of students who earned some combination of an AS-T 1, AS-T 2, and DTA (including MRPs based on those degrees) appear more than once.

250 214 Median credits earned toward public biology bachelor's degree in academic year 2015-16 211 208 204 200 196 200 150 100 50 0 All Entry **Direct Entry** Biology DTA CTC Transfer Non-CTC Types\* (N=1,063)DTA/MRP (N=358)(N=266)Transfer (N=2,022)(N=21)(N=221)Entry type Median credits to degree Direct entry median credits to degree \*Includes all students who earned an AS-T 1-related bachelor's degree, not just the entry types included in this chart.

Figure 27: In 2015-16, biology bachelor's degree earners at the public four-year institutions with a Biology DTA/MRP earned the fewest median credits to degree compared to other entry types

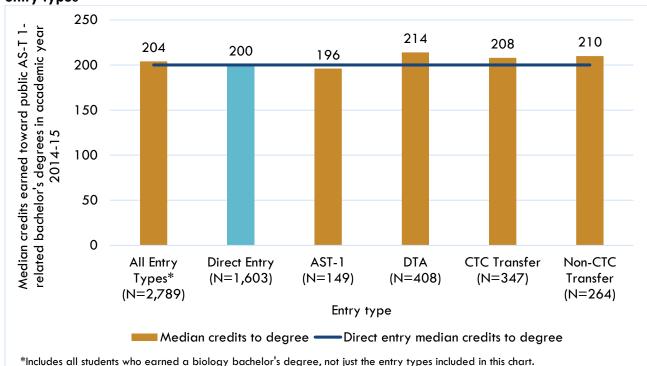
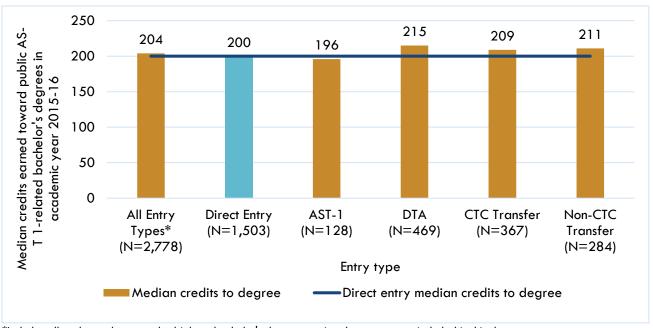


Figure 28: In 2014-15, AS-T 1-related bachelor's degree earners at the public four-year institutions with an AS-T 1 earned the fewest median credits to degree compared to other entry types

Source: WSAC staff analysis of public four-year bachelor's degree completions in academic year 2014-15 from Mutual Research Transcript Exchange (MRTE+) database.

Figure 29: In 2015-16, AS-T 1-related bachelor's degree earners at public four-year institutions with an AS-T 1 earned the fewest median credits to degree compared to other entry types



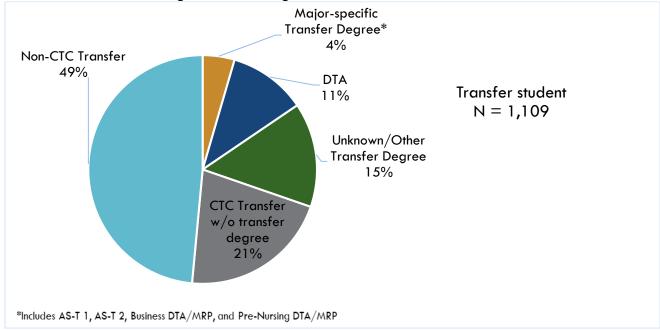
\*Includes all students who earned a biology bachelor's degree, not just the entry types included in this chart.

Source: WSAC staff analysis of public four-year bachelor's degree completions in academic year 2015-16 from Mutual Research Transcript Exchange (MRTE+) database.

### ICW institutions

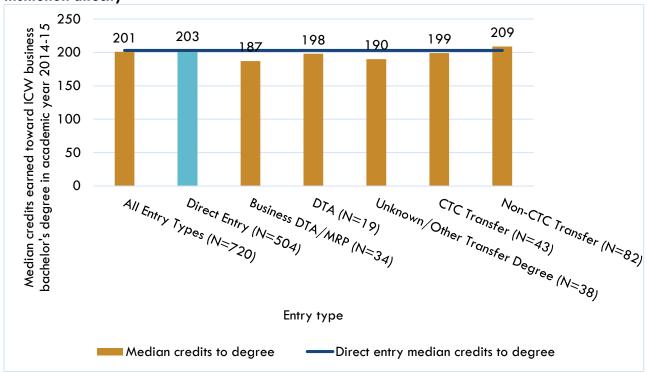
## Academic year 2014-15 figures

Figure 30: 30 percent of transfer students who earned an ICW bachelor's degree in 2014-15 transferred with a Washington transfer degree



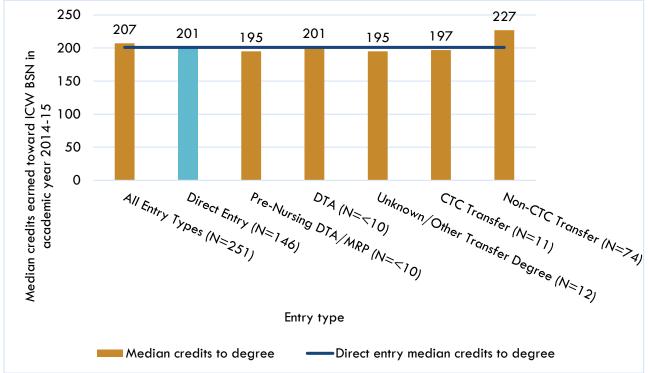
Source: WSAC staff analysis of ICW bachelor's degree earners in academic year 2014-15 from data received in June 2018 from participating ICW institutions.

Figure 31: Transfer students with a Business DTA/MRP earned 16 fewer median credits toward an ICW business bachelor's degree in 2014-15 than students who entered the institution directly



Source: WSAC staff analysis of ICW bachelor's degree earners in academic year 2014-15 from data received in June 2018 from participating ICW institutions.

Figure 32: In 2014-15, students with a Pre-Nursing DTA/MRP earned six fewer median credits toward their BSN than direct entry students



Source: WSAC staff analysis of ICW bachelor's degree earners in academic year 2014-15 from data received in June 2018 from participating ICW institutions.

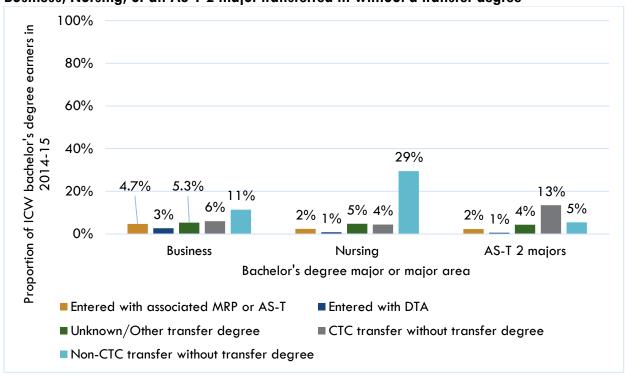


Figure 33: Most transfer students who went on to earn a 2014-15 ICW bachelor's degree in Business, Nursing, or an AS-T 2 major transferred in without a transfer degree

Source: WSAC staff analysis of ICW bachelor's degree earners in academic year 2014-15 from data received in June 2018 from participating ICW institutions.

# **About the Washington Student Achievement Council**

The Washington Student Achievement Council is committed to increasing educational opportunities and attainment in Washington. The Council has three main functions:

- Lead statewide strategic planning to increase educational attainment.
- Administer programs that help people access and pay for college.
- Advocate for the economic, social, and civic benefits of higher education.

The Council has nine members. Four members represent each of Washington's major education sectors: four-year public baccalaureates, four-year private colleges, public community and technical colleges, and K-12 public schools. Five are citizen members, including one current student.